The whole work was contrived by the engineer, Mr. Forest. The masonwork was done chiefly by Messrs. Steel and Appleby, of Newcastle. The ironwork was supplied by Messrs. Vernon and Son, and Messrs. Simpson and Co., of Aberdeen.——The official inquiry at Liverpool is going on. The most interesting portion of the evidence, hitherto lead, is that of Mr. Cox, the engineer of the new Guardian Gas Company, to which we have just alluded, and from which it appears that by means of the profit arising from the preparation and sale of coke, gas, in some circumstances, can be reduced in cost to little or nothing: that in fact gas manufactories ought to be really if not ostensibly coke manufactories. It is under a patent, however, "for the creation of heat," that Mr. Cox proposes to form his coke; and he declares that he has supplied the Great Western Railway Company at Swindon with gas "at 1s. 8d. per 1,000 feet, and did not lose by it!" The patented process he observed is peculiarly applicable to every place where there is a large demand for coke; and at Liverpool there is one firm who would purchase double the quantity which the new company could make, although they calculated on supplying 100,000,000 cubic feet of gas a year. That firm, he added, is at present selling the coke made by the patent process; and he has a tender from them to deliver coal to the works at 8s. 6d. a ton, and to take back the coke, after the gas of course is got out of it, at 13s. 2d. a ton, for sale at 23s. 6d. a ton! Why gas, it would appear, even taking such evidence *cum nota* as the lawyers say, should be sold for nothing at least, if not for "less than nothing;" in order to get rid of it as a nuisance in the profitable manufacture of coke! There are financial wonders here, it would appear, to be opened up to us, nearly akin to, and no less astonishing than, those statistical and economical subversions of all common notions that are thought to be on the eve of realization, by chemical and other companies, for the profitable disposal of the old and venerable nuisance of sewage and manure. Mr. Cox, as incidentally observed, has literally declared in his evidence, that "at one manufactory at Bristol, they made their gas for *less than nothing*." This evidence has very considerably astonished and enlightened the natives of Liverpool, and no wonder.

RAILWAY JOTTINGS.

The new system of propulsion advocated by M. Andraud, an antithesis of the atmospheric, in which air, compressed by a single atmosphere, is said to be sufficient to propel trains at the rate of fifteen to fifty miles an hour, or more, if requisite, has been tried, successfully, it is said, at Paris, on 100 yards of line laid down for the purpose. The train is impelled by means of a tube in the middle of the road, with a pipe by the side which keeps up the motive power. The cost of working is said to be no more than a tenth of that of the atmospheric, and a half of that of the locomotive, means having at length been devised for the compression of the air at a very small cost. Besides the safety and smoothness of transit, this system is said to possess all the other advantages of the exhaustive or common atmospheric system without any of its disadvantages, and to cost, in formation, as well as in working, a comparatively very small expenditure. We shall see.——Colonel Sibthorpe, who declares that "he would rather see a highwayman or a burglar on his premises than an engineer," has given notice in the Commons, that if no more competent member bring in a bill for the better regulation of railways, he himself will, on an early day, move for leave to bring in a bill to compel railway companies to give ample compensation to the survivors of those persons who may have lost their lives by accidents on railways.——Mr. Henry Booth, says the *Manchester Advertiser*, has addressed the chairman of the railway commissioners on the inconvenience experienced by travellers, post-office keepers, and railway managers, from the differences of time, caused, of course, by the differences of places in longitude; and he strongly urges the adoption of a uniform time for all England. At present, the difference of time between Liverpool and Manchester, not to speak of Leeds and Hull, produces many troublesome miscalculations, unless persons are at the trouble of altering their watches when they reach the different towns.—If proprietors of railways, highways, &c., says the *Hereford Times*, "were to plant a small sweetbriar at every yard amongst the thorns when planting hedges, how delightful they would be in the summer months to travellers. If they were but to sow a few pounds of mignonette and white clover-seed on the slopes and banks every year, how fragrant and refreshing they would be. In a few years, too, they would become naturalized and sow themselves. The weaker they grow the sweeter they are."——A chemical alarum, or whistle, invented by Mr. Mowbray, chemist, of Paternoster-row, was lately inspected by Captain Coddington on the atmospheric line at New Cross. The *Morning Post* describes it as consisting of a copper cylinder, with the usual whistle at the top, and a stone funnel within, giving the interior a sectional form, somewhat like the letter V standing within the letter U. At the bottom, or bason of the U, is placed a piece of marble (carbonate of lime), and muriatic acid is then poured into the funnel, or V, which, as it flows on the marble, liberates the carbonic acid gas, or fixed air, which forces back the remaining acid into the funnel, and thereby suspends all farther chemical change, even for months, if necessary, till the charge of gas already accumulated is let off to sound the whistle, when immediately the charge of gas is replaced, so that the sound may be repeated even so rapidly as once in every fifth second, if the instrument be set to that precise effect. The sound is said to have been distinctly audible at the distance of half a mile. The weight of the instrument may be reduced to thirty pounds without diminution of power, so that it may be readily lifted off and on the carriages or engines.——The London and York Company have become their own iron-founders at Lincoln.——The Great Western have instructed their engineers to institute a series of experiments with a view to discover, if possible, a more perfect mode of welding, by which the tires may be perfectly secure from accident in breaking either by rapidity of motion or changes in the weather.——The directors of this company have made arrangements for letting all their servants have coals carriage free, by which means those in their employment will be able to buy Welsh coals at 15s. per ton, or 9d. per cwt. They have also granted an additional allowance of 10*l.* per annum to their clerks while engaged in night duty. It is further intended to give premiums for good conduct to all who have served satisfactorily during five years and upwards. Such consideration, on the part of the directors, cannot fail to strengthen the ties between the employers and employed.——There are now 500 masons employed by the contractors for raising the piers for the Britannia Iron-tunnel bridge over the Menai straits on the Chester and Holyhead line. These men are earning 5s. to 6s. a day.——The first bar of American railway iron was forged in 1844, and there are now 16 to 18 foundries, making 120,000 tons of the same per annum. An American paper also states that there are now in operation, throughout the United States, 11,000 miles of railway, laid down at one-twentieth of the cost per mile of the English lines, and with fares one-fifth lower than those charged for passengers and parcels in this country.——Improvements in the electrical telegraph are said to have been effected, by the American inventor, Professor Morse, by which communications are impressed on paper at the rate of 50 letters per minute.——Messrs. Brett and Little, of High Holborn, have patented an improvement called the electro-telegraphic conversor, from the alleged facilities which it affords to the means of conversation between parties distant from each other in space. Moderate expense, great simplicity, freedom from vibration, and non-liability to derangement from atmospheric influences, are enumerated amongst the more obvious advantages of this invention over those at present in use. The patentees propose to lay down at their own cost any portion of line that may be required to convince railway companies and other public bodies of its unquestionable superiority to every other. Freedom from the influence of thunder-storms would be a decided improvement, as the needles of the telegraph, even on short lines, are then violently affected, while the bells are kept incessantly ringing.

ANCIENT IRONWORK IN WESTMINSTER ABBEY.

At a meeting of the Freemasons of the Church on the 9th, Mr. French in the chair, Lord Hastings exhibited a curious bronze spur of the 14th century, engraved with foliage and a lion's head, and having in the incisions remains of gilding. Mr. C. R. Cockerell, R.A., and Mr. J. B. Papworth were elected honorary fellows. Mr. Isaacs contributed two singular coffers of early date; in doing so, he said it may not be generally known that there is a class of coffers denominated BOUGE, BOUDGE, BOUGETTE, BOUGETTE, terms signifying in the 17th century, any small trunk, but applied at an earlier period exclusively to those in which ladies carried their jewels and trinkets when travelling.

A paper was then read by Mr. John Brown upon the mediæval ironwork existing in Westminster Abbey. Mr. Brown stated, that in the Blaize chapel, in the Abbey, is deposited the iron canopy which formerly surmounted the beautiful tomb of Queen Eleanor. The queen's effigy (a cast of which was exhibited), would lead any one to expect that the adornments should be in proportionate taste, and it so happens there is no disappointment on viewing this curious specimen of ancient art. Neale, in his "History of Westminster," mentions that "since the coronation, a considerable improvement has been effected in the interior appearance of the Abbey Church, by a general cleaning of the monuments and the removal of the iron-work which screened them;" now, at this coronation, which must have been that of George the Fourth, the iron-work not only of the tomb of Queen Eleanor, but that of Henry V., were placed in the dark recesses of the Blaize chapel, where they have been seldom viewed by parties who have visited the Abbey. This is to be regretted when we consider the scarcity of remains of ironwork of this period, particularly as it is desirable to have authenticated specimens of such work. The canopy of Queen Eleanor's tomb is about 15 feet long, and is divided into various compartments, each of a different pattern, which are designed and executed with the greatest skill. Mr. Brown was of opinion that it is not generally known, the ironwork of Henry Fifth's tomb is in existence; however, in this chapel nearly the whole of it may be found. The tomb of Henry V. is at the east end of the confessor's chapel: the head of the king, which the vergers say was made of silver, was taken away in the time of the troubles. Neale says "*all the damage in the Abbey was not done in the time of the troubles.*"

In the tenth volume of Rymer's "Fœdera" is the copy of an order for the payment of 12*l.* to John Ardum, clerk of the works, for thirty-six tons of Caen stone by him purchased, to make the king's tomb, and 23*l.* 6s. 8d. for making the tomb. This order bears date in the first year of Henry VI. In the same volume is also an agreement with Roger Johnson, smith, of London, for executing the ironwork of Henry Fifth's tomb. The recess in which the tomb is placed is nearly a square, inclosed by iron gates, which open under a fine pointed arch of stone, surmounted by an elegant arrangement of canopied niches, turreted, including statues and other ornaments, and flanked by octagonal towers. The general pattern of the open work of the gates consists of small squares, each containing four trefoils; their imposts and fascia are divided into thirteen compartments, which have been painted alternately blue and red; on each blue space are placed three gilt fleur-de-lis, and on each red space, three gilt lions. Below these, near the middle of the gates, were fixed alternate rows of swans and antelopes, and only one swan and two antelopes are now remaining. Mr. Brown concluded by expressing a hope that these valuable lessons in art might be placed in some position where they would be useful to students.

"A colloquial lecture on the architectural remains of London," and a paper "On the antiquities of Scotland," were announced for March 9th.

PRINCIPLES OF ENGINEERING.—The council of University College, London, has instituted a professorship of the mechanical principles of engineering, and appointed Mr. Eaton Hodgkinson to the chair.